

IN THE CLAIMS:

Please cancel claims 11-18 without prejudice or disclaimer. Please amend claims 1, 4, 6 and 9. Please add new claims 19-38. A detailed listing of all claims is as follows:

Claim 1 (Currently Amended): A block forming method whereby a digital bit stream consisting of a plurality of packets having a same length is converted into a data block and at least a main data portion in which a plurality of complete packets and partial packets consisting of only partial data can be arranged and an additional data portion in which additional data of each of said complete packets in said main data portion and additional data of one partial packet are stored are formed at different positions of said data block, respectively in said data block, comprising the steps of:

when a space area smaller than one packet occurs in an end portion of said main data portion, storing a part of the data of a next packet into said space area, storing additional data of said next packet into said additional data portion as additional data of said one partial packet, and storing remaining data of the part of the data of said next packet into a start portion of the main data portion of a next data block; and

when said space area does not occur in the end portion of said main data portion, storing additional data invalid information showing that the additional data of said one partial packet is invalid into a portion other than said main data portion in said data block.

Claim 2 (Original): A method according to claim 1, wherein said additional data invalid information is a flag which is arranged in a portion other than said main data portion and said additional data portion in said data block.

Claim 3 (Original): A method according to claim 1, wherein said additional data invalid information is a flag which is arranged in said additional data portion in said data block.

Claim 4 (Currently Amended): A block forming method whereby a digital bit stream consisting of a plurality of packets having a same length is converted into a data block and at least a main data portion in which a plurality of complete packets and partial packets consisting of only partial data can be arranged and an additional data portion in which additional data of each of said complete packets in said main data portion is stored are formed at different positions of said data block, respectively ~~in said data block~~, comprising the steps of:

when a space area smaller than one packet and larger than a size of additional data occurs in an end portion of said main data portion, storing a part of the data of a next packet into said space area, storing the additional data of said next packet into said additional data portion as additional data of the part of the data of the next packet together with the additional data of each of said complete packets, and storing remaining data of the part of the data of said next packet into a start portion of the main data portion of a next data block; and

when a space area smaller than the size of additional data occurs in the end portion of said main data portion, storing information showing that no partial packet exists in the end portion of said main data portion into a portion other than said main data portion and said additional data portion in said data block.

Claim 5 (Original): A method according to claim 4, wherein padding data in which each bit indicates zero is inserted into the space area smaller than the size of additional data of the end portion of said main data portion.

Claim 6 (Currently Amended): A block forming apparatus in which a digital bit stream consisting of a plurality of packets having a same length is converted into a data block and at least a main data portion in which a plurality of complete packets and partial packets consisting of only partial data can be arranged and an additional data portion in which additional data of each of said complete packets in said main data portion and additional data of one partial packet are stored are formed at different positions of said data block, respectively ~~in said data block~~, comprising:

discriminating means for discriminating whether a space area smaller than one packet has occurred in an end portion of said main data portion or not; and

block processing means for when the space area smaller than one packet occurs in the end portion of said main data portion, storing a part of the data of a next packet into said space area, storing additional data of said next packet into said additional data portion as additional data of said one partial packet, and storing remaining data of the part of the data of said next packet into a start portion of the main data portion of a next data block,

wherein when said space area does not occur in the end portion of said main data portion, said block processing means stores additional data invalid information showing that the additional data of said one partial packet is invalid into a portion other than said main data portion in said data block.

Claim 7 (Original): An apparatus according to claim 6, wherein said additional data invalid information is a flag which is arranged in a portion other than said main data portion and said additional data portion in said data block.

Claim 8 (Original): An apparatus according to claim 6, wherein said additional data invalid information is a flag which is arranged in said additional data portion in said data block.

Claim 9 (Currently Amended): A block forming apparatus in which a digital bit stream consisting of a plurality of packets having a same length is converted into a data block and at least a main data portion in which a plurality of complete packets and partial packets consisting of only partial data can be arranged and an additional data portion in which additional data of each of said complete packets in said main data portion is stored are formed at different positions of said data block, respectively ~~in said data block~~, comprising:

means for discriminating whether a space area smaller than one packet and larger than a size of additional data has occurred in an end portion of said main data portion or not; and

block processing means for when said space area smaller than one packet and larger than the size of additional data occurs in the end portion of said main data portion, storing a part of the data of a next packet into said space area, storing the additional data of said next packet into said additional data portion as additional data of the part of the data of the next packet together with the additional data of each of said complete packets, and storing remaining data of the part of the data of said next packet into a start portion of a next data block,

wherein when a space area smaller than the size of additional data occurs in the end portion of said main data portion, said block processing means stores information showing that no partial packet exists in the end portion of said main data portion into a portion other than said main data portion and said additional data portion in said data block.

Claim 10 (Original): An apparatus according to claim 9, wherein padding data in which each bit indicates zero is inserted into the space area smaller than the size of additional data of the end portion of said main data portion.

Claims 11-18 (Canceled).

Claim 19 (New): A block forming method whereby a digital bit stream consisting of a plurality of packets is converted into a data block which includes at least a main data portion having a plurality of complete packets and partial packets consisting of only partial data, and an additional data portion arranged at a position different from said main data portion, having additional data of each of said complete packets in said main data portion and additional data of one partial packet, comprising the steps of:

when a space area smaller than one packet occurs in an end portion of said main data portion, storing a part of the data of a next packet into said space area, storing additional data of said next packet into said additional data portion as additional data of said one partial packet, and storing remaining data of the part of the data of said next packet into a start portion of the main data portion of a next data block; and

storing additional data invalid information showing whether the additional data is invalid or not into a portion other than said main data portion in said data block.

Claim 20 (New): A method according to claim 19, wherein said additional data invalid information is information determined in accordance with whether a partial packet is stored in the end portion of said main data portion or not.

Claim 21 (New): A method according to claim 19, wherein said additional data invalid information is arranged at a position to be read earlier than said main data portion and said additional data portion in the data block.

Claim 22 (New): A method according to claim 19, wherein said additional data is information for random access of a packet.

Claim 23 (New): A block forming apparatus in which a digital bit stream consisting of a plurality of packets is converted into a data block which includes at least a main data portion having a plurality of complete packets and partial packets consisting of only partial data, and an additional data portion arranged at a position different from said main data portion, having additional data of each of said complete packets in said main data portion and additional data of one partial packet, comprising:

a discriminating device which discriminates whether a space area smaller than one packet has occurred in an end portion of said main data portion or not; and

a block processing device which when the space area smaller than one packet occurs in the end portion of said main data portion, stores a part of the data of a next packet into said space area, stores additional data of said next packet into said additional data portion as additional data of said one partial packet, and stores remaining data of the part of the data of said next packet into a start portion of the main data portion of a next data block,

wherein said block processing device stores an additional data invalid information showing whether the additional data is invalid or not into a portion other than said main data portion in said data block.

Claim 24 (New): An apparatus according to claim 23, wherein said additional data invalid information is information determined in accordance with whether a partial packet is stored in the end portion of said main data portion or not.

Claim 25 (New): An apparatus according to claim 23, wherein said additional data invalid information is arranged at a position to be read earlier than said main data portion and said additional data portion in the data block.

Claim 26 (New): An apparatus according to claim 23, wherein said additional data is information for random access of a packet.

Claim 27 (New): An information recording medium on which a digital bit stream consisting of a plurality of packets is recorded, the digital bit stream being converted into a data block which includes at least a main data portion having a plurality of complete packets and partial packets consisting of only partial data, and an additional data portion arranged at a position different from said main data portion, having additional data of each of said complete packets in said main data portion and additional data of one partial packet,

wherein when a space area smaller than one packet occurs in an end portion of said main data portion, a part of the data of a next packet is stored into said space area, additional data of said next packet is stored into said additional data portion as additional data of said one partial packet, and remaining data of the part of the data of said next packet is stored into a start portion of the main data portion of a next data block; and

wherein additional data invalid information showing whether the additional data is invalid or not is stored into a portion other than said main data portion in said data block.

Claim 28 (New): An information recording medium according to claim 27, wherein said additional data invalid information is information determined in accordance with whether a partial packet is stored in the end portion of said main data portion or not.

Claim 29 (New): An information recording medium according to claim 27, wherein said additional data invalid information is arranged at a position to be read earlier than said main data portion and said additional data portion in the data block.

Claim 30 (New): An information recording medium according to claim 27, wherein said additional data is information for random access of a packet.

Claim 31 (New): A playing apparatus for playing an information recording medium carrying a digital bit stream consisting of a plurality of packets is recorded, the digital bit stream being converted into a data block which includes at least a main data portion having a plurality of complete packets and partial packets consisting of only partial data, and an additional data portion arranged at a position different from said main data portion, having additional data of each of said complete packets in said main data portion and additional data of one partial packet, wherein when a space area smaller than one packet occurs in an end portion of said main data portion, a part of the data of a next packet is stored into said space area, additional data of said next packet is stored into said additional data portion as additional data of said one

partial packet, and remaining data of the part of the data of said next packet is stored into a start portion of the main data portion of a next data block; and wherein additional data invalid information showing whether the additional data is invalid or not is stored into a portion other than said main data portion in said data block,

said apparatus comprising:

a reading device which reads the additional data invalid information in said data block;

and

a reproducing device which reproduces the packet in said data block in accordance with the read additional data invalid information.

Claim 32 (New): A playing apparatus according to claim 31, wherein said additional data invalid information is information determined in accordance with whether a partial packet is stored in the end portion of said main data portion or not.

Claim 33 (New): A playing apparatus according to claim 31, wherein said additional data invalid information is arranged at a position to be read earlier than said main data portion and said additional data portion in the data block.

Claim 34 (New): A playing apparatus according to claim 31, wherein said additional data is information for random access of a packet.

Claim 35 (New): A playing method for playing an information recording medium carrying a digital bit stream consisting of a plurality of packets is recorded, the digital bit stream

being converted into a data block which includes at least a main data portion having a plurality of complete packets and partial packets consisting of only partial data, and an additional data portion arranged at a position different from said main data portion, having additional data of each of said complete packets in said main data portion and additional data of one partial packet, wherein when a space area smaller than one packet occurs in an end portion of said main data portion, a part of the data of a next packet is stored into said space area, additional data of said next packet is stored into said additional data portion as additional data of said one partial packet, and remaining data of the part of the data of said next packet is stored into a start portion of the main data portion of a next data block; and wherein additional data invalid information showing whether the additional data is invalid or not is stored into a portion other than said main data portion in said data block,

said method comprising the steps of:

reading the additional data invalid information in said data block; and

reproducing the packet in said data block in accordance with the read additional data invalid information.

Claim 36 (New): A method according to claim 35, wherein said additional data invalid information is information determined in accordance with whether a partial packet is stored in the end portion of said main data portion or not.

Claim 37 (New): A method according to claim 35, wherein said additional data invalid information is arranged at a position to be read earlier than said main data portion and said additional data portion in the data block.

Claim 38 (New): A method according to claim 35, wherein said additional data is information for random access of a packet.